

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A camera subassembly, ~~said camera subassembly~~ comprising:
a housing having a first opening through which light can enter into the housing, and a second opposing opening;
a substrate, ~~said~~ the substrate closing said second opening;
a window which closes the first opening, the housing and the window being formed so that, when the housing is mounted to the substrate so that the substrate closes the second opening, the housing, and the substrate form an enclosure which is substantially sealed against ingress of contaminants;
a first lens located within the enclosure;
at least a first elongated member, said first elongated member having a first end coupled to ~~said~~ the housing and a second end coupled to ~~said~~ the first lens such that the first lens is moveable relative to the housing backward and forward in a direction in which light passes from the first opening through the housing to the second opening; and
an electrically controlled movement ~~importing~~ imparting apparatus in ~~said~~ the housing, said electrically controlled movement ~~importing~~ imparting apparatus at least partially secured to the housing and at least partially secured to the first lens, said electrically controlled movement ~~importing~~ imparting apparatus, when operated at time of camera subassembly operation, causes backward and forward movement of the first lens in the direction in which light passes through the housing.
2. (Original) The camera subassembly as claimed in claim 1 wherein the position of the first and second openings relative to one another cannot be changed.

3. (Original) The camera subassembly as claimed in claim 1 wherein the window comprises a refractory lens.

4. (Currently Amended) The camera subassembly as claimed in claim 1 wherein ~~said~~ the substrate closing ~~said~~ the second opening comprises:

a printed circuit substrate to which the housing is mounted so that the printed circuit substrate closes the second opening such that the housing, the window and the printed circuit substrate ~~forming~~ form an enclosure which is substantially sealed against the ingress of contaminants; and

an imager mounted within the enclosure to the printed circuit substrate in a position so that light is focused on the imager after passing through the window and the first lens.

5. (Currently Amended) The camera subassembly as claimed in claim 4 further comprising:

a connector on the printed circuit substrate at a location external to the enclosure, the connector being within electrical communication with the imager. [[.]]

6. (Original) The camera subassembly as claimed in claim 5 wherein the connector has terminals through which at least power and control signals can be supplied to and image data can be communicated with the imager.

7. (Original) The camera subassembly as claimed in claim 4 wherein the imager comprises a light detector array.

8. (Cancelled)

9. (Currently Amended) The camera subassembly as claimed in claim 1 wherein the first elongated member coils around an axis which extends in the direction in which light passes through the housing.

10. (Currently Amended) The camera subassembly as claimed in claim 9 wherein the first elongated member coils around an axis of revolution of the lens.

11. (Currently Amended) The camera subassembly as claimed in claim 1, ~~said camera subassembly~~ further comprising:

at least a second elongated member, said second elongated member having a first end connected to the housing and a second end connected to the first lens.

12. (Original) The camera subassembly as claimed in claim 11 wherein the first and second elongated members each coils around an axis which extends in the direction in which light passes through the housing.

13. (Original) The camera subassembly as claimed in claim 12 wherein the first elongated member coils in a first plane and the second elongated member coils together with the first elongated member in substantially the first plane.

14. (Currently Amended) The camera subassembly as claimed in claim 11 wherein, when viewed in the direction in which light travels through the housing, the first ends of respectively the first and second elongated members are connected to the housing on opposing sides of the first lens.

15. (Currently Amended) The camera subassembly as claimed in claim 14 wherein, when viewed in the direction in which light travels through the housing, the second ends of respectively the first and second elongated members are connected to the housing on opposing sides of the first lens.

16. (Previously Presented) The camera subassembly as claimed in claim 12, ~~said camera subassembly~~ further comprising:

a third elongated member, said third elongated member comprising

a first end connected to the housing and spaced from the first end of the first elongated member in the direction in which light travels through the housing, and

a second end connected to the first lens and spaced from the second end of the first elongated member in the direction in which light travels through the housing, wherein the third elongated member coils around an axis which extends in the direction in which light travels through the housing.

17. (Currently Amended) The camera subassembly as claimed in claim 16, ~~said camera subassembly~~ further comprising:

at least one stiffener element which is connected between the first elongated member and the third elongated member.

18. (Previously Presented) The camera subassembly as claimed in claim 16, ~~said camera subassembly~~ further comprising:

a fourth elongated member, said fourth elongated member comprising

a first end connected to the housing and spaced from the first end of the second elongated member in the direction in which light travels through the housing, and

a second end connected to the first lens and spaced from the second end of the second elongated member in the direction in which light travels through the housing, wherein the fourth elongated member coils around an axis which extends in the direction in which light travels through the housing.

19. (Currently Amended) The camera subassembly as claimed in claim 11 wherein the first end of the second elongated member is spaced from the first end of the ~~second~~ fourth elongated member in the direction in which light passes through the housing, and the second end of the ~~first~~ second elongated member is spaced from the second end of the ~~second~~ fourth elongated member in the direction in which light passes through the housing.

20. (Currently Amended) The camera subassembly as claimed in claim 1, ~~said camera subassembly~~ further comprising:

a mounting structure within the enclosure,

wherein the first member is mounted to the mounting structure and the first lens is mounted to the mounting structure so that the first lens is connected to the first member via the mounting structure.

21. (Currently Amended) The camera subassembly as claimed in claim 20, ~~said camera subassembly~~ further comprising:

at least ~~an~~ one additional lens mounted to the mounting structure, the ~~lenses~~ first lens and the at least one additional lens being moveable together with the mounting structure relative to the housing. [[.]]

22. (Currently Amended) The camera subassembly as claimed in claim 21 wherein ~~all the lenses~~ the first lens and the at least one additional lens through which the light passes between the first and second opening are mounted to the mounting structure.

23. (Original) The camera subassembly as claimed in claim 21 wherein only some of the lenses through which the light passes between the first and second opening are mounted to the mounting structure.

24. (Currently Amended) The camera subassembly as claimed in claim 1 wherein the electrically controlled movement imparting apparatus comprises a first electrical coil which causes movement of the first lens relative to the housing when energized.

25. (Original) The camera subassembly as claimed in claim 24 wherein the first electrical coil is located within the enclosure.

26. (Currently Amended) The camera subassembly as claimed in claim 25 wherein the first electrical coil is connected to the first lens.

27. (Original) The camera subassembly as claimed in claim 25 wherein the first member is at least partially conductive and the first electrical coil is electrically accessed through the first member.

28. (Currently Amended) The camera subassembly as claimed in claim 26 wherein the movement imparting apparatus includes a permanent magnet mounted to the housing, which cooperates with the first electric coil to cause movement of the first electric coil relative to the permanent magnet when the first electrical coil is energized.

29. (Currently Amended) A camera subassembly, ~~said camera subassembly~~ comprising:

a housing;

a lens located ~~with~~ within the housing; and

at least a first elongated member having a first end secured to the housing and a second end secured to the lens so as to mount the lens to the housing, and an elongated section between the first and second ends to allow for backwards and forward movement of the lens relative to the housing in a direction of an axis of revolution of the lens,

wherein the first elongated member has a thickness in a direction of the axis of revolution, and a width in a direction transverse to the axis of revolution, the width being more than the thickness.

30. (Original) The camera subassembly as claimed in claim 29 wherein at least the first member allows for movement of the lens in the direction of the axis of revolution only.

31. (Cancelled)

32. (Original) The camera subassembly as claimed in claim 30 wherein the first elongated member coils around the axis of revolution.

33. (Previously Presented) The camera subassembly as claimed in claim 29 wherein the first elongated member coils around the axis of revolution.

34. (Currently Amended) The camera subassembly as claimed in claim 29, ~~said camera subassembly~~ further comprising:

a second elongated member, said second elongated member comprising
a first end connected to the housing and
a second end connected to the lens,

wherein the first ends of the first and second elongated ~~member~~ members are spaced from one another in a direction in which the axis of revolution extends, and the second ends of the first and second elongated ~~member~~ members are spaced from one another in a direction in which the axis of revolution extends.

35. (Currently Amended) A method of assembling a camera subassembly, said method comprising:

mounting a first lens within an enclosure using a flexible member which allows for backwards and forward movement of the first lens relative to the housing, said housing having a first and a second opening, said housing having a second lens fixed to said housing;

mounting a window to the first opening of the housing; and

mounting a substrate to the second opening of the housing, the substrate and a window jointly ~~define~~ defining an enclosure which is substantially sealed against ingress of contamination;

wherein movement of the first lens relative to said second lens is controllable with an externally applied electrical signal at operation time of said camera subassembly.

36. (Previously Presented) A method of assembling a camera subassembly, said method comprising:

closing an opening into a housing containing a first lens fixed to said housing with a window;

locating a second lens within the housing; and

interconnecting the second lens with the housing by at least a first flexible member which, due to its flexibility, allows for backward and forward movement of a second lens relative to the housing and first lens along a direction in which light travels through the housing; wherein the flexible member coils around an axis which extends in the direction in which light passes through the housing lens.